

Precision Aerobatics

– Company Review –

by Jason Pickering

Well, here's a review with a difference, we are putting the manufacturer under the microscope rather than the product.

Ok, I can already hear the question being asked; "Why on earth would that be of interest to all of us?" Well, right in our backyard, based here in Sydney, is a company producing some remarkable and capable aircraft that are being taken very seriously by some very serious players on the world RC scene.





This amazing little company has only been operating for a little under three years, and has already attracted the attention of world class aerobics pilots such as Bill Hempel, Jason Noll, Garrett Morrison, Benoit Direck and many others. PA now exports to North America, the UK, Europe, South Africa the Middle East as well as Singapore, Malaysia & New Zealand to name a just a few. These factors alone make not only the planes, but also the company producing them worthy of serious investigation. It's always nice to see "one of our own" make it on the world scene but this is perhaps the first time an Australian based company has made such an impact on the very competitive "supply chain" of high quality ARF's, especially in such a short time.

So, what do they make, and what makes them so special? As the name suggests, Precision Aerobatics primarily design and build aircraft that are for..... well..... precision aerobatics. Actually, chief designer and co-founder, Shaun Vanunu, has a passion for freestyle and it shows, as most of the designs, while being highly capable of IMAC, are primarily designed around 3D parameters. At the big end, is the 42% Extra 330L competition class plane, right down to the tiny indoor electric "Butterfly" with something to suit everybody in-between. A rather obsessive amount of attention is paid to weight (or rather a lack of) with every gram needing to justify itself, and some very clever engineering used to ensure a sound structure. This is an absolute necessity when it comes to big gassers that have to contend with sometimes severe vibration, high G forces and impact forces to consider.

During the course of writing this review, I had the pleasure of numerous chinwags with both Shaun and his other half, Adad. While Shaun busies himself with designing, developing and overseeing production of new aircraft, Adad controls the promoting, shipping and customer enquiries both here in Australia and abroad. They work their own hours (although being a gentlemanly start often goes late into the night) with nothing but their passion for the hobby to drive them. The fun they are having whilst doing what they do is unmistakable and whatever success they are having commercially is without a doubt of secondary importance.

I've already mentioned the obsession with weight and the design aspects, but really the most important key ingredient is encapsulated in the company slogan, "quality counts". A



remarkable amount of emphasis is placed on this facet of production. It is not only the design stages, material selection and production runs that are quality controlled but even right down each individual plane. Obviously there are aspects of the production process that need not be discussed and as there is a degree of sensitivity around such things I have decided to include a transcript of part of the interview that was held in preparation for this review.

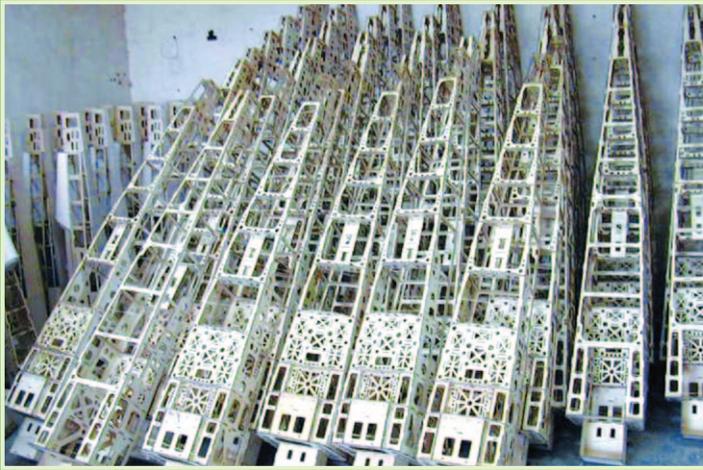
The success of PA's models on the world scene speaks a lot for the place this country has in the in the industry, and the level of expectation that we have developed. The model aircraft industry in Australia has gone forward in leaps and bounds in the last five years or so and the introduction of fresh new suppliers to the market can only prove to be of benefit to us as consumers. "Now honey, where's that credit card?"

Author: *What is the distinguishing factor that makes your planes so popular in this very competitive market?*

PA: "It would have to be our attention to quality. We strive to meet some very high standards that we have set for ourselves in all facets, from the selection of materials to jigs we use, to the hardware we use. We don't follow the policy of using what ever we can get for the best price. We set our standard for each model, and then pay whatever is needed to reach that standard. Even the hardware is carefully sourced from the best supplier for each item, and if we are not satisfied with others, we will produce it ourselves. We specialize in carbon fiber and make our own carbon tubes, rods, carbon plates, carbon landing gear, carbon wheel pants, carbon spinners, carbon gearbox, carbon servo arms and control horns. The raw materials for his are sourced in Japan as they have the best. Other raw materials such as the ply, balsa, etc. are carefully selected piece by piece from some of the best suppliers in the world".

Author: *During the design stage of each model, what things are considered?*

PA: "Several things, obviously the aerodynamic aspects are crucial. During my years as a full size pilot in I learned a lot about the different characteristics of aerodynamics and I work this into my designs. The approach of designing a model as a reduced size aircraft rather than a toy makes a big difference. When it comes to designing the construction, it's important that each piece compliments the next, to make a stiff, strong component, then that component compliments the next and so forth. Things don't need to be built like brick houses to be strong, if each item depends on, and complements the next you can achieve strong overall structure for very little weight. This philosophy goes through into the selection of materials



designed into the model. Rather than just using 'balsa' as an overall material, we use hard balsa where that's best, light balsa elsewhere, lite ply, birch ply, carbon fiber, Kevlar etc; what ever material serves that piece best. It often takes many hours to design just one piece. Other important factors are construction techniques, which have taken many years to develop, and are unique to our designs. These allow us to ensure not just structural integrity but also assure a straight frame during the building of each model".

Author: *How is the quality of your products ensured?*

PA: "The biggest key to that is we have our own factory rather than farming out the building as many do. This allows us to scrutinize each production run as we see fit. Another rather unique approach that we implement is that in each production run, we build and assemble each individual plane instead of individual components. Even with our smaller planes such as the Katana Mini and Bad Boy, each plane is test assembled prior to covering, matched, then numbered. The Giant scale ones are scrutinized at all stages of construction and records kept of incidence reading, dihedral etc. In fact there are eight different stages at which they undergo a complete quality review, with the last one being conducted by me personally, where I check the complete plane as an assembled unit".

Author: *Tell us about your factory; where is it and what sort of equipment do you have?*

PA: "Of course it is in China, as nearly all of them are, but we actually located ours in the far north. We learned from the problems most others suffer from due to the high humidity in the south that affects the balsa, the covering and other raw materials. The far north of china is a dry cool climate which is much better for the stability of the airframes. This was one of the benefits of setting up our own factory, from the ground up. We could choose where to put it and what to put in it. Of course our inventory of plant is growing constantly but we currently have state of the art CNC machines, laser cutters, high temp machines for carbon fiber molding and CNC foam cutter."

Author: *What drives you in this business?*

PA: "I just love planes. Always have."

